

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Examiner : John M. Cooney
Art Unit : 1796
Appellants : Thomas M. Kurth et al.
Appln. No. : 09/944,212
Filing Date : August 31, 2001
Confirmation No. : 2406
For : **TRANSESTERIFIED POLYOL HAVING SELECTABLE
AND INCREASED FUNCTIONALITY AND URETHANE
MATERIAL PRODUCTS FORMED USING THE POLYOL**

Dear Sir:

APPEAL BRIEF (37 C.F.R. § 41.37)

This brief is in furtherance of the Notice of Appeal, filed in this case on May 18, 2010.

The fees required under 37 C.F.R. § 41.20, and any required petition for extension of time for filing this brief and fees therefor, are to be charged to Deposit Account No. 16-2463 unless paid otherwise at the time this Appeal Brief is filed.

This brief contains these items under the following headings and in the order set forth below (37 C.F.R. § 41.37(c)(1)):

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The Final page of this brief bears the attorney's e-signature.

I. REAL PARTY IN INTEREST

The real party in interest in this application is Urethane Soy Systems, Co. (Appellants) the assignment to which was recorded at Reel 012137, Frame 0517, on August 31, 2001.

II. RELATED APPEALS AND INTERFERENCES

Appellants are aware of no appeals or interferences that would directly affect, or be directly affected by, or have a bearing on, the Board's decision in the pending appeal.

III. STATUS OF CLAIMS

This is an appeal from a Final Rejection of claims 83-108 of the above-identified application. Claims 1-82 are canceled. Claims 83-108 are currently pending in the present application and are rejected. No claims currently stand allowed. The rejections of claims 83-108 are appealed. Claims 83-108, the claims on appeal, as last amended and entered on November 3, 2009, are attached hereto in the Claims Appendix.

IV. STATUS OF AMENDMENTS

All amendments found in this application have been entered, and are attached hereto in the Claim Appendix.

V. SUMMARY OF CLAIMED SUBJECT MATTER

A. Independent Claim 83

Independent claim 83 defines, a material comprising the reaction product of an A-side comprising an isocyanate (**found at page 5, lines 11-12; page 8 lines 15-18; and page 9, line 1**) and a B-side comprising a transesterified polyol and a urethane catalyst (**found at least at page 5, lines 12-15; page 5, line 24 – page 6 line 10; and page 13, lines 1-7**), wherein the transesterified polyol is produced by combining components to form a mixture that forms the transesterified polyol wherein the components of the mixture comprise a first polyol having at least two hydroxyl groups (**found at least at page 6, lines 4-7**), and a blown vegetable oil having fatty acid chains (**found at least at page 6, lines 17-23**), and wherein the mixture further comprises an esterification catalyst (**found at least at page 8, lines 7-9**) or the mixture is heated to from about 198° F to 325° F (**found at least in Examples 25-27, 41, 48, 50, 63, 65, 68, 73, 93, and 101 found from page 25, line 15 to page 45, line 7**), and wherein the blown vegetable oil comprises from 70% by weight to 98.8% (**found at least in Examples 3-5, 9-15, 17, 19, 25-27, 34, 41, 44, 48, 50, 53, 61, 63, 65, 68, 73, 75, 81, 84, 87, 90, 93, 95, 101, 105, 108, 123-124, and 127-136 found at page 16, line 11 to page 55 line 11.**) by weight of the mixture and wherein the blown vegetable oil comprises a blown vegetable oil chosen from the group consisting of a blown palm oil, a blown safflower oil, a blown canola oil, a blown soy oil, a blown cottonseed oil, and a blown rapeseed oil (**found at page 6, lines 21-23**).

B. Independent Claim 101

Independent claim 101 defines, a material comprising a transesterified product of a mixture comprising a blown vegetable oil (**found at least at page 6, line 17 and page 7, lines 3-4**) wherein the blown vegetable oil comprises a blown vegetable oil chosen from the group consisting of a blown palm oil, a blown safflower oil, a blown canola oil, a blown soy oil, a blown cottonseed oil, and a blown rapeseed oil (**found at least at page 6, lines 21-23**) and a polyol component containing a plurality of functional hydroxyl groups (**found at least at page 6, lines 4-7**) wherein the blown vegetable oil is present in an amount of from 52 to 96% by weight of the mixture (**found at least in Examples 3-6, 9-15, 17, 19, 25-26, 34, 41, 44, 48, 50, 61, 63, 65, 68, 75, 81, 84, 87, 93, 95, 101, 105, 108, 123-124, 127-128, and 131-133 at page 16, line 11 to page 54, line 15**) and the blown vegetable oil and the polyol component are heated to a temperature of from 198° F to 250° F (**found at least in Examples 25-27, 41, 48, 50, 65, 68, 73, 93, and 101 at page 25, line 15 through page 45, line 7**).

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

Claims 83-108 stand rejected under 35 U.S.C. § 112, first paragraph and 35 U.S.C § 103(a) as being unpatentable over U.S. Patent No. 5,688,860 to Croft; in view of U.S. Patent No. 4,185,146 to Burke and U.S. Patent No. 4,720,571 to Trowell.

VII. ARGUMENTS

A. Rejection of Claims 83-108 under 35 U.S.C. § 112

Claims 1-82 are canceled. Of the currently pending claims (claims 83-108), claims 83 and 101 are independent claims. Claims 84-100 ultimately or directly depend from claim 83 and claims 102-108 ultimately or directly depend from claim 101. All of the claims stand rejected under 35 U.S.C. § 112, first paragraph and 35 U.S.C § 103(a) as being unpatentable over

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U.S. Patent No. 5,688,860 to Croft; in view of U.S. Patent No. 4,185,146 to Burke and U.S. Patent No. 4,720,571 to Trowell.

In the Office Action mailed June 19, 2009, the Examiner rejected several claims under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. In response to that Office Action, Appellants dutifully pointed the Examiner to specific examples which clearly established that Appellants were in possession of the claimed invention at the time of filing. In the most recent Final Office Action mailed February 18, 2010, the Examiner maintained the earlier rejections and noted that:

It is maintained that the recited value points for specific exemplified embodiments of applicants' invention are not supportive of the ranges of values now claimed. Further, even though applicants are now reciting ranges that are more represented by the examples, it is maintained that these examples are not supportive of the range of values for materials encompassed by the claims as they currently stand.

(Office Action, page 3.)

In particular, claims 83-108 remain rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Specifically, the Office Action states that Applicants' supporting disclosure lacks a showing of possession of (1) ranges of amounts of blown vegetable oils used and (2) ranges of amounts for the respective A-side and B-side component parts (Office Action, p. 2).

The Examiner has the burden of making out a *prima facie* case that the appealed claims do not comply with Section 112 first paragraph, written description requirement, by setting forth evidence or reasons why, as a matter of fact, the written description in Appellants' disclosure would not reasonably convey to persons skilled in this art that Appellants were in possession of the invention defined by the claims, including all of the limitations thereof, at the time the application was filed. *See, e.g., In re Alton*, 76 F.3d 1168, 1172, 1175-76, (Fed. Cir. 1996) (citing *In re Wertheim*, 541 F.2d 257, 262-64 (CCPA 1976)). Appellants assert that to one of ordinary skill in the art, the instantly claimed invention is described in such a way as to make it clear that Appellants were in possession of the invention at the time of filing. According to the

court, “(t)he function of the description requirement is to ensure that the inventor had possession of, as of the filing date of the application relied upon, the specific subject matter later claimed by him; how the specification accomplishes this is not material.” (Emphasis added). *In re Herschler*, 200 U.S.P.Q. 711, 717 (C.C.P.A 1979). Further, ‘(i)t is not necessary that the application describe the claim limitations exactly, but only so clearly that one having ordinary skill in the pertinent art would recognize from the disclosure that appellants invented processes including those limitations.” *Id.* In the present case on appeal, the Examiner has not developed facts on the record sufficient to establish a *prima facie* case of obviousness. The Examiner simply concludes that the claimed ranges are not supported without stating why.

Appellants respectfully submit that the recited ranges are fully supported by the Examples identified in the originally filed disclosure. This Board has consistently held that examples, such as those provided to the Examiner in this case, serve as adequate support for ranges and fully satisfy the written description requirement. Specifically, while in the non-precedential opinion in *Ex Parte Steven L. Schilling and Edward E. Ball*, Appeal No. 2009-004616 of Application No. 10/154,028, decided July 13, 2009, the Board, citing the precedential cases *in re Alton* and *in re Wertheim*, reversed a decision by this very Examiner wherein the Examiner had then held that specification Examples 2 and 3, found in Table 3 of the specification, did not provide sufficient descriptive support for rigid polyurethane foams to which the claims in question had been limited. These claims had the proviso “wherein the rigid polyurethane foam has a closed cell content of at least 87% closed cells average.” In making the rejection in that case the Examiner, apparently rejected the claims based upon the mere number of Examples. The Board stated:

There is no dispute that the rigid polyurethane foam illustrated in Specification Examples 2 and 3, which are prepared from different butyl alcohol isomers and have 87.0% and 88.5.% closed cells average, respectively, fall within claim 1.

On the facts in the record before us, we agree with Appellants that these two examples are sufficient evidence establishing that the written description in the Specification reasonably conveys to persons skilled in this art that Appellants were in possession of the invention defined by the appealed claims, including all of the limitations thereof, at the time the Application was filed.

...[T]he mere number of Examples alone is not dispositive with respect to whether, as a matter of fact, the written description in the Specification establishes to persons skilled in this art that Appellants were in possession of the invention defined by the claims. Rem. 3-4. Indeed, here, the Examiner improperly maintains that two examples are insufficient based on mere speculation that different process conditions may achieve unpredictable results. Ans. 4-5. The Examiner's position is tantamount to an argument of lack of enablement which falls under a different provision of § 112, first paragraph, and does not support a rejection under the written description requirement which is a separate issue. *See, e.g., Alton*, 76 F.3d at 1175.

Accordingly, in the absence of a prima facie case of failure to comply with the written description requirement, we reverse the ground of rejection of appealed claims 1 through 30 under 35 U.S.C. § 112, first paragraph.

(*Ex Parte Schilling*, page *2).

In the case presently pending, Appellants have provided a multitude of Examples which have both defined the upper and lower limits of the amended claim ranges and have provided several other examples that fall clearly within those limits. As such Appellants respectfully submit that one of skill reading the specifications would have understood that Appellants were in possession of the claimed invention here. Such evidence is a clear showing of Appellants' compliance with the written description requirement.

Similarly, in *Ex Parte Jackson*, the Board found that a claim which recited a carbon derivative from 4% to 20% was fully supported by specification examples showing 4%, 15%, and 20% of the amount of that carbon derivative (*Ex Parte Jackson*, 110 USPQ 561, 562 (B.P.A.I., 1956)). In another case, the non-precedential *Ex Parte Francesco Masi*, Appeal No. 1998-2451 of Application No. 08/317,826, decided September 26, 2002, the Board reversed the finding of the primary Examiner where the Examiner found that there was no support in the specification for the phrase "P is between 1 and 2." In their Brief before the Board, Appellants argued that the range of P is between 1 and 2 and is fully supported by three examples which cover the lower limit of "P is 1," the upper limit of "P is 2," and the midpoint of "P is 1.5."

(*Ex Parte Masi*, page 3). Citing *Ex Parte Jackson*, the Board found that the values of 1, 1.5 and 2 was an appropriate description to support the claimed range of “P is between 1 and 2.” Thus, based on these three examples wherein the limits were defined in the examples, as well as a midpoint identified falling between these limits, the Board was able to find adequate support for the claimed range as well as full compliance with the written description requirement.

In the present case, not only are the upper and lower limits defined in the examples for the claimed ranges for amounts of blown vegetable oils and A-side to B-side values, but several examples are also provided showing amounts falling across the claimed ranges. Thus, Appellants respectfully submit that at least the examples previously brought to the Examiner’s attention in the responses dated April 8, 2009, and November 3, 2009, show that Appellants were in possession of the invention as claimed at the time of filing and further show that Appellants’ claimed ranges were properly supported by the specification as originally filed in compliance with the Section 112, first paragraph, requirements.

Claims 83-100 Range of the Amount of Blown Vegetable Oil is Supported in the Original Specification

With respect to ranges of amounts of blown vegetable oils used, Appellants respectfully submit that more than adequate support exists in the originally filed disclosure for the claims in question. The range of amounts of blown vegetable oil claimed in claim 83 is “from 70% by weight to 98.8% by weight.” In Appellants’ April 8, 2009, response, 48 examples were submitted showing percentages of blown vegetable oils used in the composition falling clearly within this range. Specifically, Example 5 calls for a 70% amount of blown vegetable oil, and Examples 129 and 130 call for a 98.8% amount of blown vegetable oil used. The other 45 examples brought to the attention of the Examiner point to percentages which fall within the limits established by Examples, 5, 129, and 130. Ranges found in Applicant’s claims need not correspond exactly to those disclosed in the specification. The issue is whether one skilled in the art could derive the claimed ranges from the disclosure. *Vas-cath Inc. v. Mahurkar*, 935 F2d 1555, 1566, (Fed. Cir. 1991). The Patent Act and the Federal Circuit require only sufficient

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description to show one of skill in the art that the inventor possessed the claimed invention at the time of filing. *Union Oil Company of CA v. Atlantic Richfield Co.*, 208 F3d 989, 997 (Fed. Cir. 2000). Again, how the Specification accomplishes this is not material (see *In re Herschler*, 200 U.S.P.Q 711, 717 (C.C.P.A. 1979))

Appellants respectfully submit that at least the 48 examples noted below show that Appellants possessed the claimed invention at the time of filing.

<u>Example</u>	<u>Percentage of Blown Vegetable Oil</u>
3	92.5
4	85
5	70
9	85
10	80
11	80
12	73
13	85
14	85
15	95.2
17	96
19	76.9
25	78
26	88
27	97
34	89
41	78

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<u>Example</u>	<u>Percentage of Blown Vegetable Oil</u>
44	90.9
48	81
50	83
53	98
61	90.9
63	90
65	94
68	95
73	98
75	86.5
81	87
84	85
87	86.9
90	96.7
93	80
95	75.9
101	86.9
105	86.9
108	93.3
123	94.6
124	92
127	95.7
128	95.9
129	98.8

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<u>Example</u>	<u>Percentage of Blown Vegetable Oil</u>
130	98.8
131	76.4
132	76.4
133	83
134	97.4
135	97
136	98.5

Claims 101-108, Range of the Amount of Blown Vegetable Oil is supported in the Original Specification

Appellants respectfully submit that numerous examples in the present application also provide adequate support for the language of presently pending claim 101, which claims a range of from 52% to 96% by weight of blown vegetable oils used. Forty examples noted below, with Examples 6 and 17 defining the upper and lower limits, respectively demonstrate Appellants were in possession of the presently claimed invention.

<u>Example</u>	<u>Percentage of Blown Vegetable Oil</u>
3	92.5
4	85
5	70
6	52
9	85
10	80
11	80

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<u>Example</u>	<u>Percentage of Blown Vegetable Oil</u>
12	73
13	85
14	85
15	95.2
17	96
19	76.9
25	78
26	88
34	89
41	78
44	90.9
48	81
50	83
61	90.9
63	90
65	94
68	95
75	86.5
81	87
84	85
87	86.9
93	80
95	75.9
101	86.9
105	86.9

<u>Example</u>	<u>Percentage of Blown Vegetable Oil</u>
108	93.3
123	94.6
124	92
127	95.7
128	95.9
131	76.4
132	76.4
133	83

Claims 84-85- Range of A-side

Claims 84 and 85 require from 31 parts to 100 parts A-side to 100 parts B-side (claim 84) and from 61 parts to 100 parts A-side to 100 parts B-side (claim 85).Appellants respectfully submit that support for the ranges claimed in claims 84 and 85 may be found expressly in various examples of the present application. Specifically, support for claim 84 (“from 31 to 100 parts A-side to 100 parts B-side”) is shown in at least the following 45 examples. These examples indicate the limits for the claimed range, both 31 parts and 100 parts A-side, are exemplified. Moreover, a multitude of Examples falling within those limits are also shown.

<u>Example</u>	<u>Parts A-side</u>
1	55
2	46
3	61
4	61
5	61
7	38

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<u>Example</u>	<u>Parts A-side</u>
8	31
9	60
10	40
11	100
12	61
13	80
14	61
17	61
18	61
20	57
21	71
22	45
24	57
28	61
29	67
30	90
31	61
32	74
33	55
35	61
37	67
38	67
40	100
42	61
43	61
46	40

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<u>Example</u>	<u>Parts A-side</u>
51	56
52	54
54	56
55	40
58	41
59	61
60	45
62	61
64	61
66	61
67	61
71	61
74	45

Similarly, support for claim 85 (“from 61 parts to 100 parts A-side to 100 parts B-side”) is found expressly in at least the following examples. These 27 examples define the limits and fall within the claimed range, again showing that Appellants were in possession of the invention at the time of filing.

<u>Example</u>	<u>Parts A-side</u>
3	61
4	61
5	61
11	100
12	61
13	80

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<u>Example</u>	<u>Parts A-side</u>
14	61
17	61
18	61
21	71
28	61
29	67
30	90
31	61
32	74
35	61
37	67
38	67
40	100
42	61
43	61
59	61
62	61
64	61
66	61
67	61
71	61

Temperature range of claims 83, 93, 94, 96-97, and 101 are supported by the Original Specification.

The most recent Office Action further states that claims 83-108 were again rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement stating that Appellants' recitation of ranges of heat values as set forth in the claims (specifically claims 83, 93, 94, 96, 97, and 101) were not supported by the originally filed supporting disclosure (Office Action, p. 4). Claims 83, 93, 94, 96, 97, and 101, claim ranges of 198° F to 325° F (claims 83 and 97); and 198° F to 250° F (claims 93, 94, 96, and 101). Appellants respectfully submit that support for the presently pending claimed temperature ranges may be found in the Specification (see generally page 6)¹, and specifically in at least in the following Examples, demonstrating that Appellants were in possession of the invention at the time of filing are noted below:

<u>Example</u>	<u>Temperature (°F)</u>
25	230
26	220
27	202
41	240
48	227
50	250

¹ The Specification states: [G]lycerin, a suitable multifunctional alcohol, or other suitable multifunctional alcohol is heated to about 230° F, and advantageously also stirred; however, a catalyst may be used instead of or in addition to hear. Next, a multifunctional component having at least two hydroxyl groups preferably includes a saccharide compound, typically a monosaccharide, disaccharide, a polysaccharide, sugar alcohol, cane sugar, honey, or mixture thereof is slowly introduced into the glycerin until saturated...

...[B]lown soy oil, is heated to at least about 180° F. However, the temperature may be any temperature from about 180° F until the oil is damaged.

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63	325
65	235
68	200
73	205
91	100
93	212
101	198

For example, Example 25 specifically states that the combination of blown soy oil, glycerin and cane sugar solution “was heated at a temperature of 230°F and mixed for 15 minutes.” The other examples are similarly worded. One of skill in this art reading the Specification as a whole, and specifically the numerous examples identified, would know and understand that Appellants were in possession of the range values now claimed.

B. Rejection of Dependent Claims 84 and 85 under 35 U.S.C. § 112

The Office Action further states that claims 84 and 85 were rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement stating that Appellants’ recitation of ranges of amounts of transesterified polyol are not supported by the originally filed supporting disclosure (Office Action, pp. 4-5).

Claim 84 and claim 85, since it depends from claim 84, both recite a range of the amount of transesterified polyol in the B-side of from 27.5% by weight to 99.6% by weight of the B-side. Appellants submit that support for the amount of transesterified polyol in the B-side ranging from 27.5% by weight to 99.6% by weight of the B-side may be found in the various Examples of the originally filed specification. For example, in Example 54 the transesterified polyol makes up 27.5% by weight of the B-side while in Example 98 the transesterified polyol makes up 99.6% of the B-side. These values represent the upper and lower claimed values. Other Examples show values within this range, including at least Examples 7-9 (75%, 53.6%, and

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93.6%), 80 (97.2%) and 88 (98%). Thus, Appellants respectfully submit that the Examples, as specifically detailed in the originally filed disclosure, adequately support a range of at least 27.5% to 99.6% transesterified polyol in the B-side. Since one of skill would understand Appellants were in possession of the presently claimed invention based upon the reading of the Specification as a whole and at least the specific Examples noted above, Appellants submit that the Examiner has not established a *prima facie* case of failure to comply with the written description requirement. As such, these rejections should be overturned.

C. Rejection of Claims 83-108 under 35 U.S.C. § 103(a)

Claims 83-108 stand rejected under 35 U.S.C. §103(a) in the most recent Office Action as being unpatentable over Croft (U.S. Patent No. 5,688,860) in view of Burke (U.S. Patent No. 4,185,146) and Trowell (U.S. Patent No. 4,720,571) (Office Action, p. 6). Specifically, the Office Action states "Croft discloses polymer materials comprising the reaction product of isocyanates, isocyanate reactive materials, catalysts, plasticizers, extenders/crosslinkers, and other materials of Applicants' claims" (Office Action, p. 6). The Examiner then admits that "Croft differs from Applicants' claims in that it does not employ blown vegetable oil in its preparation." The Examiner then simply states that "Burke... discloses blown vegetable oils, including soya oils, to be well known materials in forming urethane materials," and states that transesterification catalysts are "well known to the polyurethane forming art," identifying Trowell as a reference.

It appears that the Examiner has attempted to show that the elements of the pending claims were each independently known, which, even if true, is not enough to support a *prima facie* case of obviousness. The Supreme Court stated, "a patent composed of several elements is not proved obvious merely by demonstrating that each of its elements was, independently, known in the art." *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1741 (2007).

Appellants submit that Croft does not disclose (expressly or inherently) or suggest the presently pending claimed inventions. The Examiner asserts that (1) urethane reactions employing soybean oil (as a plasticizer) are known; (2) blown soybean oil is a known reactive component in urethane

reactions, and (3) transesterification catalysts are known. In particular, Appellants' claim 83 recites that the transesterified polyol is produced using an esterification catalyst or by heating the mixture to a temperature of from 198° F to 325° F. Claim 101 is specifically directed to the transesterified product of specific blown vegetable oils and a polyol containing a plurality of functional hydroxyl groups. Again, Croft does not disclose the use of an esterification catalyst or heating the mixture. Croft only discloses the use of a catalyst for catalyzing the urethane reaction or heat for accelerating crosslinking of the urethane reaction. As such, Appellants respectfully submit that contrary to the Examiner's assertions, Croft does not disclose or teach any transesterification of a blown vegetable (soy) oil with other multifunctional polyols.²

Additionally, Appellants respectfully submit that it would not have been obvious to one having ordinary skill in the art to combine the teachings of Croft with Burke to arrive at the claimed invention. "[When] the prior art teaches away from combining certain known elements, discovery of the successful means of combining them is more likely to be non-obvious." *KSR Int'l Co. v. Teleflex Inc.* 127 S. Ct. 1727, 1740 (2007). Based on Croft's disclosure, Croft teaches away from including a blown oil as disclosed in Burke. The unmodified soybean oil used in Croft is used as a plasticizer. A plasticizer is defined as a "chemical added especially to

² 37 C.F.R. §1.104(c)(2) states that "When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained in each rejected claim specified. "The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court, quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness.'" MPEP 2141, *KSR* at 1741, 82 USPQ2d at 1396."

rubbers and resins to impart flexibility, workability, or stretchability.” (see Merriam Webster Dictionary definition attached). Specifically, Croft himself states in the ‘860 patent that “the plasticizing system is preferably selected so as to be essentially inert with polyurethane/polyurea reaction products and substantially non-exuding” (Croft, col. 11, lines 45-47). Also, the Croft reference expressly defines the term essentially inert in the Summary of the Invention section, wherein Croft states “the term ‘essentially inert’ as used herein means that the plasticizer does not become cross-linked into the polyurethane/polyurea reaction product.” (Croft, col. 3, lines 38-40) (emphasis added). Thus, if the plasticizer does not become cross-linked into the polyurethane/polyurea reaction product, there is no urethane reaction of the soybean oil of Croft, which is used as a plasticizer. Thus, Appellants submit that the Croft reference itself discourages one of ordinary skill in the art from substituting the plasticizer for a reactive component let alone modifying the non-reactive plasticizer of Croft by blowing it and replacing that non-crosslinking plasticizer with a blown vegetable oil that does contain hydroxyl groups that become cross-linked.

The law clearly states that if proposed modification (e.g., modifying the teachings of Croft to incorporate the blown oil from Burke) would render the prior art invention being modified unsatisfactory for its intended purpose, then there is no suggestion or motivation to make the proposed modification. *In re Gordon*, 733 F. 2d 900, (Fed. Cir. 1984). MPEP § 2143.01(V). Here, the modification proposed by the Examiner of using a blown vegetable oil would render the Croft reference unsatisfactory for its intended purpose. The disclosure in Croft states that the intended purpose of the plasticizer is to be “essentially inert.” Blown vegetable oil, which contains hydroxyl groups that are reactive in a urethane system, is not a component that is “essentially inert” which could be added to the teachings of Croft to yield a product that is satisfactory for the intended purposes of Croft. The teachings of Croft are to make a polyurethane product which is to be used as a sealer or soft putty for filling in space between different elements. Accordingly, Appellants submit that the use of the blown oil containing functional hydroxyl OH groups goes against the intended purpose of Croft, which

calls for the incorporation of an oil to be a plasticizer that is "essentially inert." The oil extends the system of Croft to allow it to function as a sealant.

Fundamentally, the '860 patent to Croft uses soybean oil as a plasticizer in a urethane reaction. With respect to claim 83, the blown vegetable oil is a component of the mixture that forms the transesterified polyol which is then reacted with a mixture containing isocyanate to form a urethane material. Accordingly, not only does Croft not show or suggest the use of a blown vegetable oil, it is distanced still further from the subject matter of claim 83 in that claim 83 is directed toward the use of the blown vegetable oil as a component of a mixture that forms a transesterified polyol. Similarly, claim 101 is directed to a material comprising a transesterified product of a mixture. The transesterified polyol is thereafter used as a polyol component in the production of a urethane material.³

The Examiner cites *In re Aller*, 105 USPQ 233, for the proposition that discovering optimal or workable ranges involves only routine skill in the art. However, the court in *In re Yates* 663 F.2d 1054 (CCPA 1981) made it clear that *In re Aller* does not necessarily support such a broad proposition, stating that:

The Solicitor, relying upon *In re Aller*, 42 C.C.P.A. 824, 220 F.2d 454, 105 U.S.P.O. 233 (1955), argues that it is 'not unobvious to discover optimum or workable ranges by routine experimentation.'

In many instances, this may be true. The problem, however, with such 'rules of patentability' (and the ever-lengthening list of exceptions which they engender) is that they tend

³ What is more, Croft cannot be combined with the teachings of Burke with any reasonable expectation of success. The Examiner points to column 1 lines 26-33 as disclosing blown vegetable oils to be well known materials used in urethane applications. However, the Burke reference at column 1 lines 26-33 incorporates by reference U.S. Pat. No. 2,833,730, which has proven to be a nonenabling reference. (See the Declaration of John G. Peldonia). When the procedures disclosed in Example 4 of the '730 patent are followed, the intermediate result is a solid mass that cannot be mixed with water and a diethanol amine catalyst as called by the final steps of the procedure disclosed therein. Quite simply, there is no teaching or suggestion to transesterify a blown vegetable oil containing reactive hydroxyl groups with another polyol (by heating or the use of a transesterification catalyst) and use the resultant transesterified polyol as a

to becloud the ultimate legal issue-obviousness-and exalt the formal exercise of squeezing new factual situations into preestablished pigeonholes. Additionally, the emphasis upon routine experimentation is contrary to the last sentence of section 103. *Id.* at n4. In *Aller*, the prior art showed essentially the same process as recited in the claims, and the prior art suggested the possibility of changing parameters of that process. In contrast, the prior art relied upon by the Examiner in the present case does not even recognize transesterification of a blown vegetable oil let alone recognizing the parameters that should be changed.

With respect to the combination of references suggested by the Examiner, the MPEP sets forth that the standard for obviousness requires that there must be some suggestion, either in the reference or the relevant art, of how to modify what is disclosed to arrive at the claimed invention. MPEP § 2143. The combination of prior art references must have been “obvious to a person with ordinary skill in the art.” *KSR Int’l Co. v. Teleflex, Inc. et al.*, 127 S. Ct. 1727 (2007). To be *prima facie* obvious, there must be an apparent reason why a person of ordinary skill in the art would combine the references, and that analysis should be made explicit. *Id.* Here, there is no reason to believe that using a transesterified polyol derived by transesterifying a blown vegetable oil with another polyol with multiple functional hydroxyl groups alone (see claim 101) and/or as a reactive component in the production of a urethane material (as claimed in claim 83) was obvious. There simply is no apparent reason to combine Croft with Burke and/or Trowell absent hindsight.

Accordingly, Appellants submit that the obviousness rejections under 35 U.S.C. § 103(a) is unfounded and should be withdrawn and claims 83-108 be allowed.

D. Conclusion

Appellants respectfully submit that the Examiner has not established a *prima facie* case of obviousness for the reasons discussed above. Moreover, even if a *prima facie* case of obviousness has been established, Appellants respectfully submit that the unexpected results

B-side reactive polyol in a urethane reaction to form a urethane material.

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achieved by the present invention with no established likelihood of success overcome any such showing. Accordingly, Appellants respectfully assert that claims 83-108 are allowable for this additional reason.

D. Conclusion

For the reasons set forth above, when properly considering the cited references, claims 83-108 define patentable subject matter fully supported by the originally filed disclosure. Accordingly, reversal of the rejections of these claims under 35 U.S.C. § 112 and § 103(a) is appropriate and respectfully solicited.

Respectfully submitted,

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IX. CLAIMS APPENDIX (37 C.F.R. § 41.27(c)(1)(viii))

83. A material comprising the reaction product of an A-side comprising an isocyanate and a B-side comprising a transesterified polyol and a urethane catalyst, wherein the transesterified polyol is produced by combining components to form a mixture that forms the transesterified polyol wherein the components of the mixture comprise a first polyol having at least two hydroxyl groups, and a blown vegetable oil having fatty acid chains, and wherein the mixture further comprises an esterification catalyst or the mixture is heated to from about 198° F to 325° F, and wherein the blown vegetable oil comprises from 70% by weight to 98.8% by weight of the mixture and wherein the blown vegetable oil comprises a blown vegetable oil chosen from the group consisting of a blown palm oil, a blown safflower oil, a blown canola oil, a blown soy oil, a blown cottonseed oil, and a blown rapeseed oil.

84. The material of claim 83, wherein the A-side and B-side are reacted in a ratio range of A-side to B-side of from 31 parts to 100 parts A-side to 100 parts B-side and the B-side comprises the transesterified polyol in an amount of from 27.5% by weight to 99.6% by weight of the B-side wherein the transesterified polyol has an ester linkage between one or more fatty acid chains of the blown vegetable oil and the first polyol such that the transesterified polyol has at least two hydroxyl groups.

85. The material of claim 84, wherein the A-side and B-side are reacted in a ratio range of A-side to B-side of from 61 parts to 100 parts A-side to 100 parts B-side.

86. The material of claim 83, wherein the mixture further comprises a saccharide compound.

87. The material of claim 86, wherein the saccharide compound comprises a saccharide compound chosen from monosaccharides, disaccharides, oligosaccharides, sugar alcohols, and honey.
88. The material of claim 86, wherein the saccharide compound comprises glucose.
89. The material of claim 86, wherein the saccharide compound comprises sorbitol.
90. The material of claim 86, wherein the saccharide compound comprises cane sugar.
91. The material of claim 83, wherein the first polyol comprises multifunctional alcohol wherein the multifunctional alcohol comprises a multifunctional alcohol chosen from glycerin, butanediol, ethylene glycol, tripropylene glycol, dipropylene glycol, and aliphatic amine tetrol.
92. The material of claim 83, wherein the B-side further comprises a crosslinker and wherein the components of the mixture comprise a transesterification catalyst and the transesterification catalyst comprises a tetra-2-ethylhexyl titonate.
93. The material of claim 92, wherein the crosslinker comprises a crosslinker chosen from glycerin, ethylene glycol, butanediol, dipropylene glycol, tripropylene glycol, dipropylene glycol, and aliphatic amine tetrol and the mixture comprises a transesterification catalyst and the mixture is heated to a temperature of from 198° F to 250° F.
94. The material of claim 83, wherein the B-side further comprises a blowing agent and the mixture heated to a temperature of from 198° F to 250° F.

95. The material of claim 94, wherein the blowing agent comprises a blowing agent chosen from water, acetone, methyl isobutyl ketone, methylene chloride, a hydrochlorofluorocarbon, and a hydrofluorocarbon and the mixture further comprises a transesterification catalyst.

96. The material of claim 83, wherein the isocyanate comprises a diisocyanate compound and the mixture is heated to a temperature of from 198° F to 250° F and a tetra-2-ethylhexyl titanate transesterification catalyst.

97. The material of claim 83, wherein the A-side consists of the isocyanate and the isocyanate comprises an isocyanate chosen from the group consisting of 2,4' toluene diisocyanate, 4,4' diphenylmethane diisocyanate, and 2,4 diphenylmethane diisocyanate and wherein the mixture is heated to a temperature of from 198° F to 325° F and wherein the material is a flexible urethane foam.

98. The material of claim 83, wherein the isocyanate comprises a prepolymer comprising the reaction product of a vegetable oil and an isocyanate.

99. The material of claim 83, wherein the material is a flexible urethane foam material.

100. The material of claim 83, wherein The B-Side further comprises a petroleum based polyol and the petroleum based polyol comprises a petroleum based polyol chosen from polyether polyol, polyester polyol, and polyurea polyol.

101. A material comprising a transesterified product of a mixture comprising a blown vegetable oil wherein the blown vegetable oil comprises a blown vegetable oil chosen from the group consisting of a blown palm oil, a blown safflower oil, a blown canola oil, a blown soy

oil, a blown cottonseed oil, and a blown rapeseed oil and a polyol component containing a plurality of functional hydroxyl groups wherein the blown vegetable oil is present in an amount of from 52 to 96% by weight of the mixture and the blown vegetable oil and the polyol component are heated to a temperature of from 198° F to 250° F.

102. The material of claim 101, wherein the mixture further comprises a transesterification catalyst.

103. The material of claim 102, wherein the polyol component containing a plurality of functional hydroxyl groups comprises a multifunctional alcohol wherein the multifunctional alcohol comprises a multifunctional alcohol chosen from the group containing glycerin, butanediol, ethylene glycol, tripropylene glycol, dipropylene glycol, and aliphatic amine tetrol.

104. The material of claim 103, wherein the mixture further comprises a saccharide compound.

105. The material of claim 104, wherein the saccharide compound comprises a saccharide chosen from monosaccharides, disaccharides, oligosaccharides, sugar alcohol, and honey.

106. The material of claim 101, wherein the polyol component containing a plurality of functional hydroxyl groups comprises a multifunctional alcohol wherein the multifunctional alcohol comprises a multifunctional alcohol chosen from the group containing glycerin, butanediol, ethylene glycol, tripropylene glycol, dipropylene glycol, and aliphatic amine tetrol.

107. The material of claim 106, wherein the mixture further comprises a saccharide compound.

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108. The material of claim 107, wherein the saccharide compound comprises a saccharide chosen from monosaccharides, disaccharides, oligosaccharides, sugar alcohol, and honey.

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X. EVIDENCE APPENDIX (37 C.F.R. § 41.37(c)(1)(ix))

The evidence submitted during this application under 37 C.F.R. §§ 1.130, 1.131 or 1.132 or any evidence entered by the Examiner and relied upon by Appellants in the appeal includes:

1. Declaration of John G. Peldonia, filed on November 3, 2009.
2. Merriam Webster Online Dictionary printout filed on April 8, 2009

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XI. RELATED PROCEEDINGS APPENDIX (37 C.F.R. §41.37(c)(1)(x))

There are no related appeals or interferences pending during this application.